

Insights from the Inside

Some new Features in VGSTUDIO MAX 3.1

VG Support

Simplify your Daily Work with VGSTUDIO MAX 3.1

Part I – Talk

Dr. Barbara Brehm

 Part II – Live presentation Yannick Luck

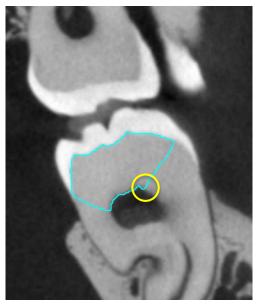




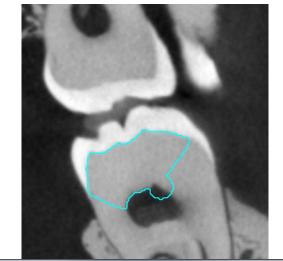


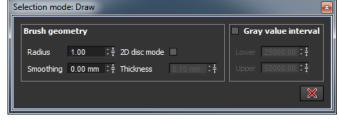
Draw Tool with Gray Value Interval

Start ROI

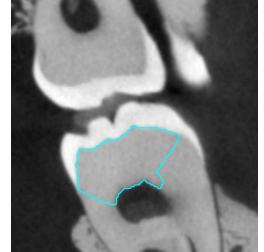


Without gray value interval





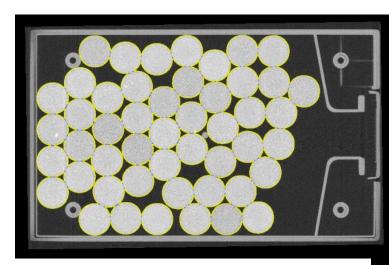
With gray value interval



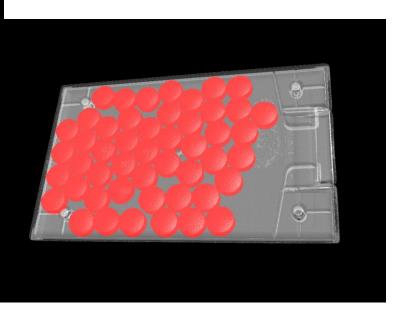
Selection mode: Draw Brush geometry Radius 1.00 : ‡ 2D disc mode Smoothing 0.00 mm : ‡ Thickness 0.5 mm : ‡ Upper 50000.00 : ‡ X



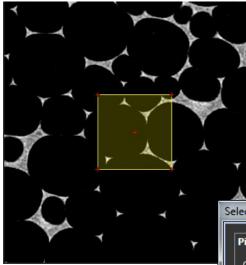
Gray Value Range with Histogram



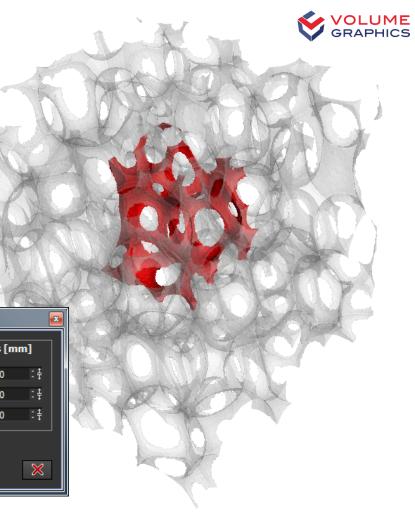
Selection mode: Gray value range				
Interval	Histogram			
Lower 31610.1 :‡				
Upper 40150.9 :‡				
	×			



Define ROI Dimensions



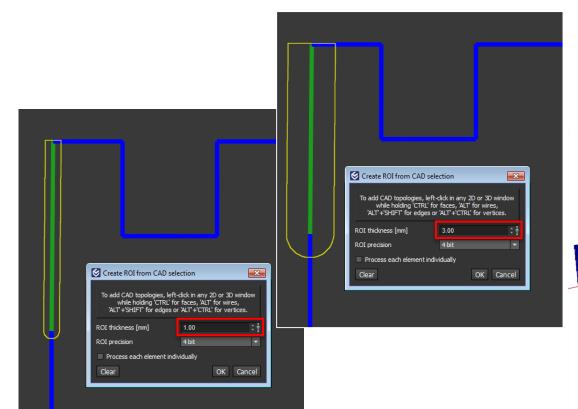
Selection mode: Rectangle				
Pivot point	Position [mm] Dimensions [mm]			
o — o	x 0.00 :‡	Width 0.50 :‡		
	Y 0.00 : ‡	Height 0.50 :‡		
o — o	Z -0.30 ∶‡	Depth 0.50 ∶‡		
✓ Make slice views follow pivot point				
		×		



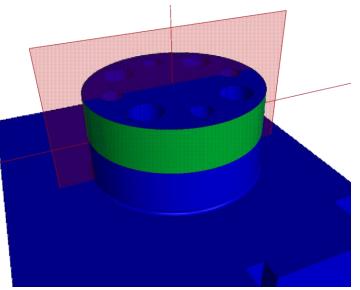
5



ROI from CAD Selection

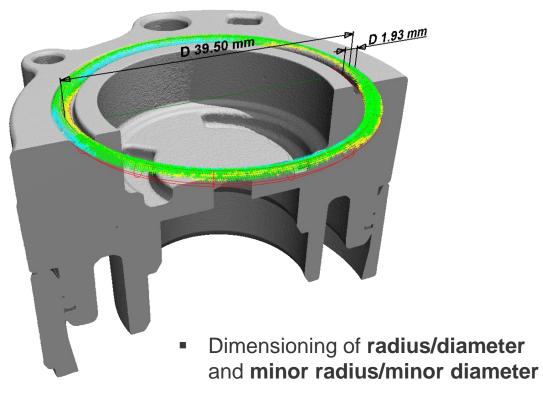


 Create ROI and define thickness





Torus



S Dimensioning				
Name template	<feature> <id> R</id></feature>			
	Find highest number			
	Start number:			
	Min. digits:			
Туре	Radius 🔻			
Projection	Position Radius			
View	Diameter Minor radius			
Coord. system	Minor diameter			
Source A	Torus 1 👻			
Source B	n/a 🔻			
Angle mode	n/a 💌			
Quadrant	Quadrant 0			
Angle options	Reflex angle Flip sign			
Depth	0.00 :‡			
Tol. table	Choose tol. table			
Nom.	0.00			
Tol. (lo)	1.00			
Tol. (hi)	+ 1.00			
Tol. (ex) [%]	0.000			
Allow defined elements	Yes 🔻			
Value	0.24 mm 23.53 %			
	Ok			
	IXI			
Create	Close			



Adjustable Auto Expand

2	 Use Incr roug
Auto expand o	ptions
Shape	Disk
Diameter [mm]	2.00

- Useful for fitting datum targets
- Increases fitting stability on rough surfaces

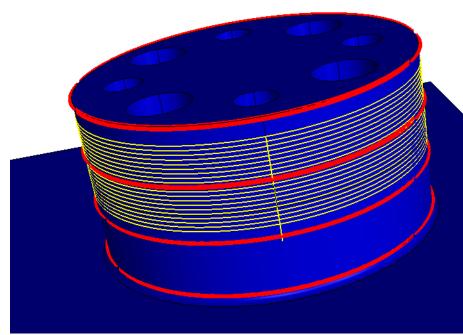
Auto expand options				
Shape	Disk	O Square		
Diameter [mm]	2.00		÷ŧ	
Step width [mm]	0.10		÷ŧ	



Customizable Extraction of Medial Axis

- Specify **Top border** and **Bottom border** separately
- Select Fit method for resulting circles

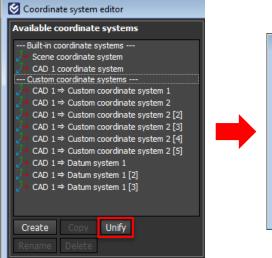
Extract medial axis	×
Parameters	
Number of circles 20	Ŧ
Top border [%] 10.00 🗘	🗄 [mm] 2.37 💠 🕂 🔊
Bottom border [%] 40.00	[‡] [mm] 9.46 ‡
Fit method	
Gauss (least squares) Gauss (least squares) Chebyshev (minimum zone) Chebyshev (minimum zone) inn Chebyshev (minimum zone) out Minimum circumscribed Maximum inscribed	

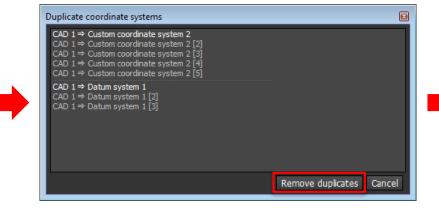


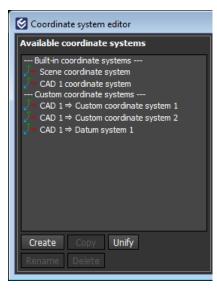


Coordinate System Editor

- Editing several coordinate systems at once Unifying
 - Unifying









Coordinate System Editor

- Editing several coordinate systems at once
 - Unifying
 - Renaming

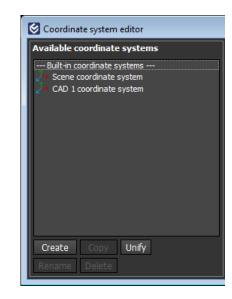
Coordinate system editor		Scoordinate system editor
Available coordinate systems		Available coordinate systems
Built-in coordinate systems Scene coordinate system CAD 1 coordinate system Custom coordinate systems CAD 1 ⇒ Custom coordinate system 1	Rename objects Select one or more objects and change their names on 1 Changes will be applied for all objects as soon as you p Object list	Built-in coordinate systems Z → Scene coordinate system Z → CAD 1 coordinate system Custom coordinate systems Z → CAD 1 ⇒ VG Custom coordinate system 1
 CAD 1 ⇒ Custom coordinate system 2 CAD 1 ⇒ Datum system 1 	Group Original name Final name Full path (original) Resolved final name <none> <coordinate.datum> 1 VG <coordinate.datum> 1 <coordinate.datum> 1 of CAD 1 VG Datum system 1 <none> <coordinate.datum> 2 VG <coordinate> 2 VG Custom coordinate system 2 <none> <coordinate.s< td=""> VG <coordinate> 1 VG Custom coordinate system 2 <none> <coordinate.s< td=""> VG <coordinate> 1 VG Custom coordinate system 2 <none> <coordinate.s< td=""> VG <coordinate> 1 VG Custom coordinate system 1 <none> <coordinate.s< td=""> Image: 1 VG <coordinate< td=""> Image: 1 VG <coordinate> 1 VG Custom coordinate system 1 Image: 1 VG <coordinate> 1 VG Custom coordinate system 1 Image: 1 VG <coordinate> 1 VG Custom coordinate system 1 Image: 1 Image: 1 VG <coordinate> 1 Image: 1 Image: 1 Image: 1 Image: 1</coordinate></coordinate></coordinate></coordinate></coordinate<></coordinate.s<></none></coordinate></coordinate.s<></none></coordinate></coordinate.s<></none></coordinate></coordinate.s<></none></coordinate></coordinate.datum></none></coordinate.datum></coordinate.datum></coordinate.datum></none>	CAD 1 ⇒ VG Custom coordinate system 2 CAD 1 ⇒ VG Datum system 1
Create Copy Unify Rename Delete		Create Copy Unify Rename Delete



Coordinate System Editor

- Editing several coordinate systems at once
 - Unifying
 - Renaming
 - Deleting

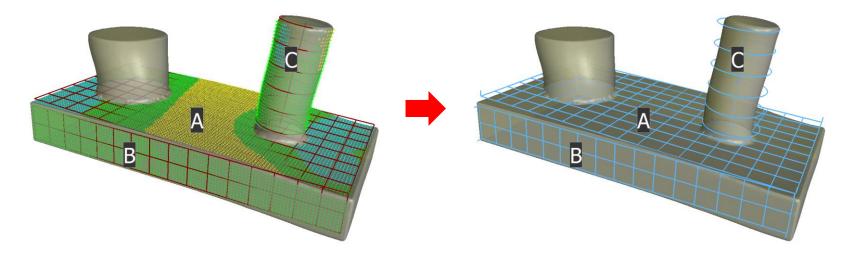
S Coordinate system editor				
Available coordinate systems				
Built-in coordinate systems → Scene coordinate system				
→ CAD 1 coordinate system				
Custom coordinate systems \checkmark CAD 1 \Rightarrow Custom coordinate system 1				
CAD 1 \Rightarrow Custom coordinate system 2				
\sim CAD 1 \Rightarrow Datum system 1				
Create Copy Unify				
Rename Delete				





Datum Systems

- Common datum types and modifiers available
- Datum geometry elements refitted:
 - Considering perpendicularity constraints
 - Using contacting fit or Gauss
- Implemented according to DIN EN ISO 5459





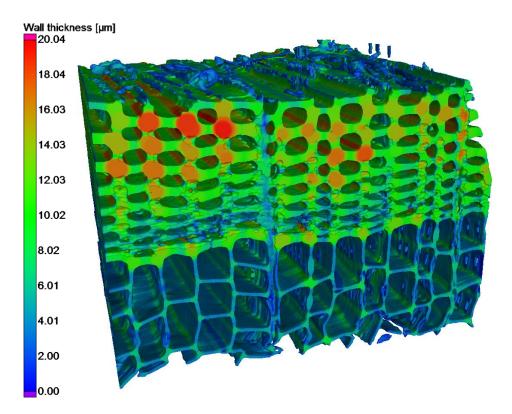
Comments in CM Reporting

CM Reporting: Volume 1				
Features Geometry elements Images Report				
Feature list	t			
🔍 Click t	o add a	filter or sea	rch criteria	
Name		Туре	Comment	Act. value [mm/deg]
1 ^{k→l} Feat	ure 1	Distance	I really like to add comments.	90.26 mm
3 Ø Feat	ure 2	Diameter	You can write whatever you like in the comment.	50.08 mm
2 📐 Feat	ure 3	Angle	:-)	90.02 deg

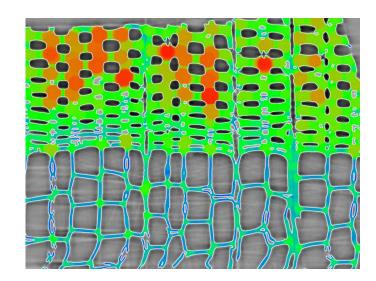
Name	Туре	Comment	Act. value [mm/deg]
Feature 1	Distance	I really like to add comments.	90.26 mm
Feature 2	Diameter	You can write whatever you like in the comment.	50.08 mm
Feature 3	Angle	:-)	90.02 deg



Sphere Method for Wall Thickness Analysis

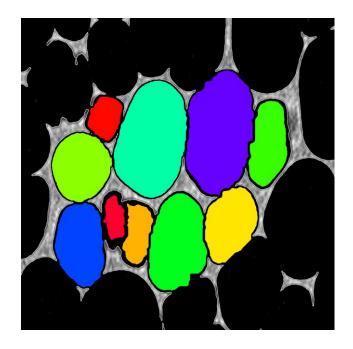


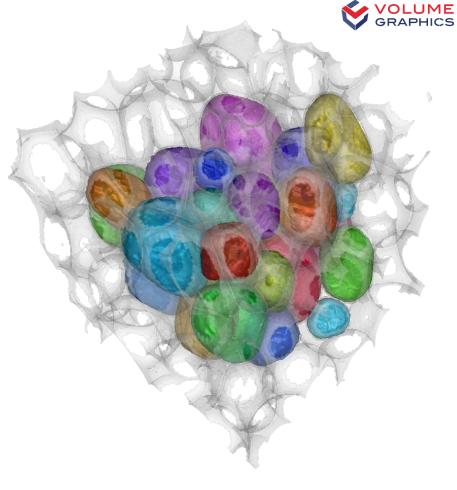
 Wall thickness determined by largest inscribed sphere



Foam Structure Analysis

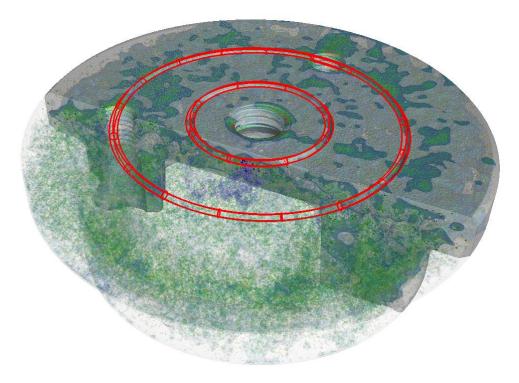
 Option to exclude border cells from statistics and visualization







Part II – Live Presentation







Thank you

Contact VG Support:

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